

REMARKS

The Examiner is thanked for the thorough examination of the above-referenced patent application. The FINAL Office Action, however, has continued to reject claims 1-17. Specifically, claims 1, 2, 5, 6, 8, 9, 12, 13, 16, and 17 have been rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent 6,924,180 to Quek. Claims 3, 7, 10, and 14 have been rejected under 35 U.S.C. § 103(a) as allegedly obvious over the combination of Quek in view of U.S. published application 20050048732 to Park et al.. Claims 4 and 11 have been rejected under 35 U.S.C. § 103(a) as allegedly obvious over the combination of Quek in view of U.S. patent 6,734,506 to Oyamatsu.

Applicants have thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the references cited therein. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

Status of FINAL Should be Withdrawn

The present Office Action has been made FINAL, allegedly because the amendments necessitated the new grounds for rejection. Applicants respectfully disagree. Only independent claims 1 and 8 were previously amended. However, the present Office Action has dependent rejected claims 3, 7, 10, and 10 citing an entirely new secondary reference (Park) as allegedly disclosing the features of these claims. As these claims were not amended, no new reference should be required for allegedly disclosing their features. Thus, the rejections of these claims constitute new grounds, which was not necessitated by any amendments previously made. As some of the claims have been rejected based on such new grounds, the amendment should have been a non-FINAL amendment.

REJECTIONS UNDER 35 U.S.C. § 102

Claims 1, 2, 5, 6, 8, 9, 12, 13, 16, and 17 were tentatively rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Quek et al. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). (MPEP 2131).

According to the claimed embodiments, before performing an ion implantation to form halo region 360, the liner 340 is etched to reduce its thickness and, then, the etched liner is used as a mask to perform the ion implantation first as defined in claims 1 and 8. The halo region 360 is used to surround the source/drain region 350. Moreover, as defined in claim 8, the halo region is formed for surrounding one of the source/drain regions 350 adjacent to the etching side

In contrast to these claimed embodiments, in the Quek disclosure, the Office Action alleges that the liner layer is composed of silicon oxide layer 11, silicon nitride layer 7 and silicon dioxide layer 4 (see page 2, rejection for claims 1 and 8 of the Office Action). However, according to Quek in column 3 line 57 to column 4 line 14, the silicon oxide layer 11, the silicon nitride layer 7 and the silicon oxide spacer component 8 are the spacer. In other words, only the silicon dioxide layer 4 is the liner layer in the cited reference. Therefore, although the cited reference appears to teach the formation of a pocket region 10 to surround the drain/source region for reducing the level of the punch through, the liner layer, the silicon dioxide layer 4, is

not etched to reduce its thickness before the pocket region 10 is formed. The only relevant teaching in the cited reference is to etch the spacer before forming a pocket region. Hence, the pocket region 10 is restricted to only a region surrounding a top portion of the sides of the source/drain region 9 as described in the column 4, lines 39-42 and column 5, lines 3-7. Moreover, the cited reference does not teach that the pocket region can be formed only for surrounding one of the source/drain regions 9.

Accordingly, features expressly recited in the claims 1 and 8 are not be disclosed in the cited reference. For at least this reason, independent claims 1 and 8 define over the cited art and the rejections should be withdrawn. In addition, insofar claims 2~7 and 9~17, which ultimately depend from claims 1 and 8, and add further limitations thereto, the 35 U.S.C. § 102(e) rejection of these claims should be withdrawn as well.

Reconsideration and withdrawal of this rejection is respectfully requested.

REJECTIONS UNDER 35 U.S.C. § 103

When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- (D) Reasonable expectation of success is the standard with which obviousness is determined.

See *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

Claims 3, 4, 7, 10, 11 and 14 were tentatively rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Quek et al. (US 6,924,180) in view of Park et al. (US 20050048732) and over Quek et al. (US 6,924,180) in view of Oyamatsu et al. (US 6,734,506) respectively. Claims 3, 4, and 7 depend from the claim 1 and add further limitations thereto. Claims 10, 11 and 14 depend from the claim 8 and add further limitations thereto

As stated above, the claims 1 and 8 teach against what Quek discloses. Moreover, the Park and Oyamatsu both do not disclose that an etching process is performed to reduce the thickness of the liner before a halo region is formed. That is, even if combining, the two cited references do not teach the feature of claims 3, 4, 7, 10, 11 and 14.

Therefore, the novel feature of claims 3, 4, 7, 10, 11 and 14 produce unexpected results and hence are unobvious and patentable over theses references. Accordingly, applicant respectfully submits that claims 3, 4, 7, 10, 11 and 14 are allowable over the art of record and respectfully requests the 35 U.S.C. § 103(a) rejection of claims 3, 4, 7, 10, 11 and 14 to be reconsidered and withdrawn.

As a separate and independent basis for the patentability of claims 3, 4, 7, 10, 11 and 14 , Applicant submit that the Office Action has failed to identify a proper suggestion or motivation to combine the selective teachings of *Quek*, *Park*, and *Oyamatsu*. It is well-settled law that in order to properly support an obviousness rejection under 35 U.S.C. § 103, there must have been some teaching in the prior art to suggest to one skilled in the art that the claimed invention would have been obvious. *W. L. Gore & Associates, Inc. v. Garlock Thomas, Inc.*, 721 F.2d 1540, 1551 (Fed. Cir. 1983). More significantly,

"The consistent criteria for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this [invention]

should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. ..." Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure... In determining whether such a suggestion can fairly be gleaned from the prior art, the full field of the invention must be considered; for the person of ordinary skill in the art is charged with knowledge of the entire body of technological literature, including that which might lead away from the claimed invention."

(Emphasis added) *In re Dow Chemical Company*, 837 F.2d 469, 473 (Fed. Cir. 1988).

In this regard, Applicants note that there must not only be a suggestion to combine the functional or operational aspects of the combined references, but that the Federal Circuit also requires the prior art to suggest both the combination of elements and the structure resulting from the combination. *Stiftung v. Renishaw PLC*, 945 Fed.2d 1173 (Fed. Cir. 1991). Therefore, in order to sustain an obviousness rejection based upon a combination of any two or more prior art references, the prior art must properly suggest the desirability of combining the particular elements to realize a method for manufacturing a MOSFET, as claimed by the Applicants.

When an obviousness determination is based on multiple prior art references, there must be a showing of some "teaching, suggestion, or reason" to combine the references. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1383 (Fed. Cir. 1997) (also noting that the "absence of such a suggestion to combine is dispositive in an obviousness determination").

Evidence of a suggestion, teaching, or motivation to combine prior art references may flow, inter alia, from the references themselves, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved. See *In re Dembiczak*, 175 F.3d 994, 1000, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Although a reference need not expressly teach that the disclosure contained therein should be combined with another, the showing of combinability, in whatever form, must nevertheless be "clear and particular." *Dembiczak*, 175 F.3d at 999, 50 USPQ2d at 1617.

If there was no motivation or suggestion to combine selective teachings from multiple prior art references, one of ordinary skill in the art would not have viewed the present invention as obvious. See *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); *Gambro Lundia AB*, 110 F.3d at 1579, 42 USPQ2d at 1383 ("The absence of such a suggestion to combine is dispositive in an obviousness determination.").

Significantly, where there is no apparent disadvantage present in a particular prior art reference, then generally there can be no motivation to combine the teaching of another reference with the particular prior art reference. *Winner Int'l Royalty Corp. v. Wang*, No 98-1553 (Fed. Cir. January 27, 2000). Well-established Federal Circuit case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Evidence of teaching or suggestion is "essential" to avoid hindsight. *In re Fine*, 837 F.2d 1071, 1075 (Fed.Cir.1988). A description of the particular "teaching or suggestion or motivation [to combine]" is an "essential evidentiary component of an obviousness holding." *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352 (Fed.Cir.1998). Indeed, in forming an obviousness type rejection, "the [Examiner] must identify specifically ... the reasons one of ordinary skill in the art would have been motivated to select the references and combine them." *In re Rouffet*, 149 F.3d 1350, 1359 (Fed.Cir.1998). The Examiner can satisfy this burden of establishing obviousness in light of combination "only by showing some objective teaching [leading to the combination]." *In re Fritch*, 972 F.2d 1260, 1265 (Fed.Cir.1992).

In combining *Park* with *Quek*, the Office Action merely concluded that it would have been obvious "because it is conventional in the art to silicide the top of a polysilicon gate for the

purpose of decreasing its resistance" (Office Action, p. 4, lines 2-5). Likewise, in combining Oyamatsu with Quack, the Office Action alleged only that the combination would have been obvious "because Oyamatsu teaches that a RTO process can successfully oxide the sidewalls of a gate to form an oxide layer thereon and because the RTO would be faster than depositing the liner using TEOS." (Office Action pp. 4-5). These bases are clearly improper, as such a conclusory, result-oriented basis could be used to reject virtually any patent claim on an improvement system that results in a device or method that realizes some perceptible improvement over the prior art. Improvements of this sort are the very basis that underscores the purpose of the patent system (e.g., the improvement of technology), and the rejection embodies clear (and improper) hindsight reasoning.

Simply stated, the Office Action has failed to comply with the relevant legal standards in combining *both Park and Oyamatsu with Quek*. Consequently, the rejections of claims 3, 4, 7, 10, 11, and 14 are legally improper and should be withdrawn.

CONCLUSION

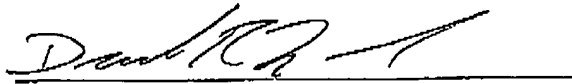
It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

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No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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